IN THE SPECIFICATION:

Please replace paragraph 4 on page 1 with the following amended paragraph:

Moreover, developments are underway to - in addition to the pixel elements - apply peripheral drive circuits directly to the ~~glas~~ glass substrate. Thus, the external driving of the display elements is simplified. Such a display apparatus with integrated drive circuits is described in document DE 198 32 297. In this event, the number of contact areas required for the picture control can be reduced. Without such drive circuits, each control line must have a contactable ~~are~~ area to allow for picture control during operation. The areas contactable by an external control are also called pads.

Please replace paragraph 4 on page 2 with the following amended paragraph:

Furthermore, the following has to be considered. Shorting bars cannot always be realized due to reasons of process, space or circuitry. Also, the function of the drive circuits is not ~~testet~~ tested with such a solution. Moreover, only simple test patterns can be generated, wherein the periodically repeated unit cell of ~~said~~ the test pattern cannot be larger than the number of shorting bars.

Please replace paragraph 5 on page 2 with the following amended paragraph:

If using, for generating a test picture, the pads used during normal operation, especially for large display elements a plurality of contact areas must be contacted during testing. This is especially difficult when large display elements are tested since the display element must be shifted during the testing method. For smaller displays, a plurality thereof is arranged on the ~~glas~~ glass so that also in this case the glass plate must be repeatedly shifted during the testing procedure. Thus, increased requirements

are demanded for the contacting block. The contacting block serves external signal input to the contact areas of the drive circuit or to the contact areas of the data lines or gate lines or the corresponding shorting bars.

Please replace paragraph 2 on page 4 with the following amended paragraph:

According to another aspect of the invention, the object of the invention is solved by an arrangement of test contact areas for providing an optoelectronic device with signals for generating a test pattern. The optoelectronic device comprises a matrix of picture elements. This arrangement has at least one pad, i.e. at least one junction area, and at least ~~on connectioin~~ one connection of the at least one pad to a drive circuit, wherein the drive circuit is provided with signals via an arrangement of operating contact areas during normal operation.

Please replace paragraph 3 on page 4 with the following amended paragraph:

According to a further aspect of the present invention, the object is solved by an optoelectronic device with a matrix of picture elements, at least one drive circuit, a first arrangement of contact areas connected with the drive circuit and a second arrangement of ~~contaqct~~ contact areas connected with the drive circuit.

Please replace paragraph 3 on page 5 with the following amended paragraph:

Figure 5 is an embodiment according to the prior art. Therein, a schematic overview of a display element 10 is shown. The individual pixels 30 are connected with the drive circuits 12 via control lines 13 for driving the pixels. During normal operation, the drive circuits are externally provided with signals via contact areas 14. In Fig. 4, only five contact areas 14 are symbolically illustrated. However, several ~~hundereds~~ hundreds

of these contact areas may be required for large display elements to provide the ~~dive~~ drive circuits with signals.

Please replace paragraph 4 on page 5 with the following amended paragraph:

The control lines 13 are connected with a shorting circuit via switching elements 22. This shorting circuit against electrostatic discharge (ESD) provides protection either only against overvoltages and allows for applying normal operational voltages .or can be switched off by means of the contact areas 20 during testing and during normal operation. The shorting circuits for the data lines and the gate lines are coupled to each other via the coupling circuits 24. All the above-described elements are integrated on the ~~glas~~ glass substrate.

Please replace paragraph 5 on page 5 with the following amended paragraph:

This conventional embodiment has the following drawbacks. A test pattern for an online-testing method is generated via the contact areas 14 of the drive circuits. ~~Sinc~~ Since these contact areas are very small due to their number, contacting during the test procedure is difficult. This is especially true for large display elements which are so large that a mechanical shift must be accomplished during the test procedure. Such a shift may be necessary if, e.g., the deflection of a particle beam is not sufficient for testing the whole display. For a large number of contact areas with a size of, e.g., below 80 µm, highly advanced contacting technology must be employed to avoid erroneous testing due to erroneous contacting. The technical requirements increase even more if the size of the display requires shifting during testing.

Please replace paragraph 4 on page 6 with the following amended paragraph:

Fig. 1 a shows a display element 100, like e.g. a display for a cell phone, a PC or a TV set. The pixels of the ~~pixelmatrix~~ pixel matrix 101 are arranged matrix-like. For picture generation, the pixels are driven via control lines 103 x and 103y, respectively. Additionally, drive circuits 102x and 102y are provided on the substrate to facilitate the external driving for picture generation. Like pixel matrix 101, also the drive circuits are applied to the substrate during the manufacturing. The drive circuits are provided with signals by an external drive via pads 104b. Thereby, the signals are transmitted to the drive circuits via lines 104a. Pads 104b and lines 104a together form the contactable areas. They will be referred to also as contact areas in the following.

Please replace paragraph 5 on beginning on page 6 with the following amended paragraph:

In practice, especially for large displays with many pixels up to more than ~~hundered~~ hundred of these contact areas (104a and 104b) exist. Therefore, these contact areas cannot be designed sufficiently large due to the restricted available space to guarantee efficient and reliable testing. Taking for example a display with a size of 4 inches (640 x 480 pixels), these contact areas according to the prior art have a size of about 60 µm times 2000 µm. During testing of the display element and the individual pixels of the pixel matrix, resp., with, e.g., an electron beam the following criteria have to be fulfilled. Firstly, a test pattern must be generated via an external drive. The contacting of the pads 104b must be accomplished certainly and reliably. Due to the size of the display element, it may be necessary to move the display with respect to the electron beam. In order to provide high speed testing, the contacting must be ~~continously~~ continuously carried along or it must be detached and reattached as quick and reliable as possible. Furthermore, the contacting block providing the contacting must ~~fuction~~ function under vacuum conditions and must not interfere with an electron

beam and the electrons to be detected, resp., because testing with an electron beam is ~~not~~ no longer possible.

Please replace paragraph 2 on page 7 with the following amended paragraph:

An error-free and efficient contacting is difficult or even impossible under these boundary conditions. Therefore, additional contact areas for testing are provided according to the invention. They consist of the pads 105b and the lines 105a connected thereto. Since no arbitrary pictures but only sufficiently ~~comples~~ complex patterns have to be generated on the display for testing, the number of these test contact areas can be reduced compared to the number of contact areas used during normal operation. Compared to the number of operational contact areas, the number of test contact areas (105a and 105b) can be reduced to a maximum of 90%, preferably a maximum 50%, and more preferably a maximum of 20%. Thus, for, e.g., a large display about 30 contact areas for the testing method are provided in addition to the about 200 contact areas for normal operation whereas for a small display with about 30 contact areas for normal operation about 5 additional test contact areas are provided.

Please replace paragraph 2 on page 8 with the following amended paragraph:

For generating a test pattern as it is described in more detail with reference to Fig. 4, the test pads 105b are connected with the lines 104a according to a first embodiment via lines 105a. The lines 104a are used for pads 104b of normal operation. Via these connections, one or more test pads can be connected with the input terminals of ~~of~~ drive circuits 102x and/or 102y. Furthermore, it is possible that a test pad is connected with multiple lines 104a for normal picture generation via switching elements or components (e.g. diodes, transistors or other components). An example for such a connection is illustrated in Fig. 1c with a ~~swichting~~ switching element or component 120. Another option for connecting multiple lines with a test pad is a

connecting structure, which is removed for normal operation. This means that the structure is cut off, e.g., during ~~glas~~ glass separation or by etch processes.

Please replace paragraph 2 on page 10 with the following amended paragraph:

According to another embodiment, the test drive circuit 202 can also serve as a multiplexer. By multiplexing the signals, e.g., in the time domain, it is possible to provide a plurality of signals via a small number of test pads 105b. In this embodiment, the buffer or possible timer components required ~~therefor~~ therefore are also integrated on the chip of one of the drive circuits.

Please replace paragraph 2 on page 11 with the following amended paragraph:

As is apparent from Fig. 4, periodicity in vertical, horizontal or diagonal direction can be generated by such a test pattern. In contrast to the above examples, it is further possible to allow more than two different potentials. Thus, each pixel can be surrounded symmetrically in the ~~horzontal~~ horizontal, vertical or diagonal by arbitrary voltages. A further potential can be generated on the electrode of the picture element itself.

Please replace paragraph 5 on page 11 with the following amended paragraph:

Nevertheless, the driving of such a periodic pattern is less complex than the generation of an arbitrary picture. Therefore, it is possible to reduce the number of test contact areas compared to the number of operational contact areas. This allows to enlarge the contact areas used for the testing method. According ~~et~~ to the present invention, this results in an improved testing method since contacting error can be reduced. Moreover, the mechanics for contacting the display to be tested can be

designed for high speed. Due to this optimization, the testing method can be further accelerated. Thereby, the throughput of the pieces to be inspected is increased.

Please replace paragraph 6 on page 12 with the following amended paragraph:

In the testing method, the display to be tested is introduced into a chamber and placed under the electron beam. ~~Fir~~ For using the electron beam, the chamber has to be evacuated down to a pressure of below 10^{-4} mbar. Furthermore, a contacting block is connected with the test contact areas according to the invention. Typically, the contacting block is a mechanics for making electrical contact between a testing device and the contact areas of the display. Then, signals are transmitted to the contact areas. Depending on the signals, the electrodes or individual electrodes of the picture elements are brought to defined potentials. Thus, a test pattern is generated. The control of the testing device tests the potentials of individual electrodes in that the electron beam is, inter alia, deflected by deflectors. Since no sufficient deflection can be realized for large displays, one portion of the display is tested first and, subsequently, the display is shifted by a shifting unit. It is important for reliable testing that the contacting of the pads is ~~continously~~ continuously maintained or can be reestablished reliably and quickly. According to the present invention, this is enabled by the test contact areas. After the shifting, another portion is tested. The interplay of shifting the display and testing of a portion can be continued until the whole display is tested or all displays on the substrate have been tested.

Please replace paragraph 2 on page 13 with the following amended paragraph:

Inter alia, the testing speed is important for the above described testing method to achieve high ~~throuhgput~~ throughput. Furthermore, the measurement must be very reliable because even 0.1 per ~~mill~~ mil of defective picture elements preclude use of the

display. When defects are detected at an early stage of the production process, error correction can be accomplished by, e.g., an ion beam or laser beam.

Please replace paragraph 3 on page 13 with the following amended paragraph:

Since even small leakage currents may result in noticeable image ~~destortion~~ distortion due to parasitic elements, it is further preferred to equip the testing device with sensitive testing methods. Therefore, electromagnetic interfering fields possibly interfering with the electron beam or the measurement of secondary electrons or backscattered electrons, must be largely avoided.

Please replace paragraph 6 on page 14 with the following amended paragraph:

According to a preferred aspect, the number of second pads of the second arrangement of contact areas is maximum 90% of the number of first pads of the first arrangement of contact areas. Preferably, the number of second pads is maximum 50%, more preferably 20%, the number of first contact areas Thus, it is possible and especially advantageous to provide the second ~~pas~~ pads of the second arrangement of contact areas with a dimension of at least 100 µm, preferably a dimension of 0.5 mm, and especially preferred a dimension of 2 mm.

Please replace paragraph 3 on page 15 with the following amended paragraph:

When testing an optoelectronic device according ~~et~~ to the present invention, it is preferred that the input signals generate a periodic test pattern. Therein, test patterns which are periodic in a vertical, horizontal or diagonal direction are especially preferred.